IN THE CLAIMS:

1. (CURRENTLY AMENDED) A method for routing a source routed packet to a Source Route Bridge (SRB) subnet for a destination station, comprising:

maintaining an address resolution protocol table (ARP table) in a router having an entry for each station on said SRB subnet to which said router routes packets, said entry having a first field containing a Layer 3 address of said each station, said entry having a second field containing a Layer 2 address of said each station including a physical (MAC) address and ~~routing~~ Route Information Field information (RIF information) from said router to said each station; and

writing said ~~routing~~ RIF information read from said second field of said ARP table into a Route Information Field (RIF) in a message packet before routing said message packet to said SRB subnet for said destination station.

2. (CURRENTLY AMENDED) The method as in claim 1 further comprising:

populating said ~~routing~~ RIF information in said ARP table by reading RIF information from a field of an All Routes Explorer (ARE) packet, either a request or response packet.

3. (CURRENTLY AMENDED) A method for routing a source routed packet to a Source Route Bridge (SRB) subnet for a destination station, comprising:

maintaining an address resolution protocol table (ARP table) in a router having an entry for each station on said SRB subnet to which said router routes packets, said entry having a first field containing a Layer 3 address of said each station, said entry having a second field containing a Layer 2 address of said each station including a physical

(MAC) address and ~~routing~~ Route Information Field information (RIF information) from said router to said each station;

writing said ~~routing~~ RIF information read from said second field of said ARP table into a Route Information Field (RIF) in a message packet before routing said message packet to said SRB subnet for said destination station; and

populating said ~~routing~~ RIF information in said ARP table by reading RIF information from a field of an Single Routes Explorer (SRE) packet, either a request or response packet.

4. (CURRENTLY AMENDED) The method as in claim 1 further comprising:

populating said ~~routing~~ RIF information in said ARP table by reading RIF information from a field of an ARP Explorer packet, either a request or response packet.

5. (PREVIOUSLY PRESENTED) The method as in claim 1 further comprising: updating said second field of said ARP table when said router receives an ARP Explorer request packet from one of said stations on said SRB subnet and said request packet contains RIF information.

6. (CURRENTLY AMENDED) A method for routing a source routed packet to a Source Route Bridge (SRB) subnet for a destination station, comprising:

maintaining an address resolution protocol table (ARP table) in a router having an entry for each station on said SRB subnet to which said router routes packets, said entry having a first field containing a Layer 3 address of said each station, said entry having a second field containing a Layer 2 address of said each station including a physical (MAC) address and ~~routing~~ Route Information Field information (RIF information) from said router to said each station;

writing said ~~routing~~ RIF information read from said second field of said ARP table into a Route Information Field (RIF) in a message packet before routing said message packet to said SRB subnet for said destination station; and

transmitting an ARP Explorer request packet upon expiration of an ARP table flush timer, and updating said second field of said ARP table in response to receipt of an ARP Explorer response packet transmitted by a station in response to said ARP Explorer request packet.

7. (ORIGINAL) The method as in claim 6 further comprising: choosing a time period of four (4) hours for expiration of said ARP table flush timer.

8. (CURRENTLY AMENDED) A method for routing a source routed packet to a Source Route Bridge (SRB) subnet for a destination station, comprising:

maintaining an address resolution protocol table (ARP table) in a router having an entry for each station on said SRB subnet to which said router routes packets, said entry having a first field containing a Layer 3 address of said each station, said entry having a second field containing a Layer 2 address of said each station including a physical (MAC) address and ~~routing~~ Route Information Field information (RIF information) from said router to said each station;

writing said ~~routing~~ RIF information read from said second field of said ARP table into a Route Information Field (RIF) in a message packet before routing said message packet to said SRB subnet for said destination station; and

transmitting a validation frame upon expiration of a validation time interval, and in the absence of a response from said validation frame, transmitting an ARP Explorer request packet, and updating said second field of said ARP table in response to receipt of an ARP Explorer response packet transmitted by a station in response to said ARP Explorer request packet.

9. (ORIGINAL) The method of claim 8 further comprising: choosing a validation time interval of 15 seconds.

10. (CURRENTLY AMENDED) A router comprising:

an address resolution protocol table (ARP table), said ARP table maintained in said router, said ARP table having an entry for each station on a Source Route Bridge (SRB) subnet to which said router routes packets, said entry having a first field containing a Layer 3 address of said station, said entry having a second field containing a Layer 2 address of said station including a physical (MAC) address and ~~routing~~ Route Information Field information (RIF information) from said router to said each station, and;

a packet format circuit to write required ~~routing~~ RIF information read from said second field of said ARP table into a Route Information Field (RIF) in a message packet before routing said message packet to a destination station on a destination SRB subnet.

11. (CURRENTLY AMENDED) A router for routing a source routed packet to a Source Route Bridge (SRB) subnet for a destination station, comprising:

means for maintaining an address resolution protocol table (ARP table) in said router having an entry for each station on said SRB subnet to which said router routes packets, said entry having a first field containing a Layer 3 address of said each station, said entry having a second field containing a Layer 2 address of said each station including a physical (MAC) address and ~~routing~~ Route Information Field information (RIF information) from said router to said each station, and;

means for writing said ~~routing~~ RIF information read from said second field of said ARP table into a Route Information Field (RIF) in a message packet before routing said message packet to said SRB subnet for said destination station.

12. (CURRENTLY AMENDED) A computer readable device containing a computer program for performing a method of routing a source routed packet to a Source Route Bridge (SRB) subnet for a destination station, comprising:

maintaining an address resolution protocol table (ARP table) in a router having an entry for each station on said SRB subnet to which said router routes packets, said entry having a first field containing a Layer 3 address of said each station, said entry having a second field containing a Layer 2 address of said each station including a physical (MAC) address and ~~routing~~ Route Information Field information (RIF information) from said router to said each station, and;

writing said ~~routing~~ RIF information read from said second field of said ARP table into a Route Information Field (RIF) in a message packet before routing said message packet to said SRB subnet for said destination station.

13. (CANCELLED)

14. (CURRENTLY AMENDED) An ARP table data structure stored in a computer memory of a router, comprising:

an entry for each station on a Source Route Bridge (SRB) subnet to which said router routes packets, said entry having a first field containing a Layer 3 address of each said station, said entry having a second field containing a Layer 2 address of said station including a physical (MAC) address and ~~routing~~ Route Information Field information (RIF information) from said router to said each station, said ~~routing~~ RIF information in said second field of said ARP table used for writing RIF information into a Route Information Field (RIF) in a message packet before routing said message packet to said SRB subnet for said each station.

15. (CURRENTLY AMENDED) The ARP table of claim 1 or claim 10, or claim 11, or claim 12~~, or claim 13~~, or claim 14 wherein said Layer 3 address further comprises:

an address for an Internet Protocol (IP) communication session.

16. (CURRENTLY AMENDED) The ARP table of claim 1 or claim 10, or claim 11, or claim 12~~, or claim 13~~, or claim 14 wherein said Layer 3 address further comprises:

an address for an Appletalk communication session.

17. (CURRENTLY AMENDED) The ARP table of claim 1 or claim 10, or claim 11, or claim 12~~, or claim 13~~, or claim 14 wherein said Layer 3 address further comprises:

an address for a connectionless mode network service communication session.

18. (CURRENTLY AMENDED) The ARP table of claim 1 or claim 10, or claim 11, or claim 12~~, or claim 13~~, or claim 14 wherein said Layer 3 address further comprises:

an address for a DECnet communication session.

19. (CURRENTLY AMENDED) The ARP table of claim 1 or claim 10, or claim 11, or claim 12~~, or claim 13~~, or claim 14 wherein said Layer 3 address further comprises:

an address for an IPX communication session.

20. (CURRENTLY AMENDED) The ARP table of claim 1 or claim 10, or claim 11, or claim 12~~, or claim 13~~, or claim 14 wherein said Layer 3 address further comprises:

an address for a XNS communication session.

21. (CURRENTLY AMENDED) The ARP table of claim 1 or claim 10, or claim 11, or claim 12~~, or claim 13~~, or claim 14 wherein said Layer 3 address further comprises:

an address for a Vines communication session.

22. (CURRENTLY AMENDED) The method of claim 1 or claim 12, or claim 13, further comprising:

receiving data by a processor, said data received from a network connection for maintaining said ARP table, and

storing said data in a FLASH memory.

23. (CURRENTLY AMENDED) The router of claim 10 or claim 11, or claim 14, further comprising:

a processor ~~receiving~~ to receive data from a network connection, said data received from a network connection for maintaining said ARP table, and to store ~~storing~~ said data in a FLASH memory.